

1999

intel®

***Designing for Connected PC...
Internet Solutions***

Asia Pacific Intel Developer Forum

亞太科技論壇

Date: April 26-28, 1999

Location: Taipei International Convention Center (TICC)
1, Hsin-Yi Rd., Sec. 5, Taipei, Taiwan

Intel Developer Forum

• *World Class Design for
the Age of the Internet*

Craig R. Barrett
President and CEO
Intel Corporation
April 26, 1999

Intel Vision: The Internet

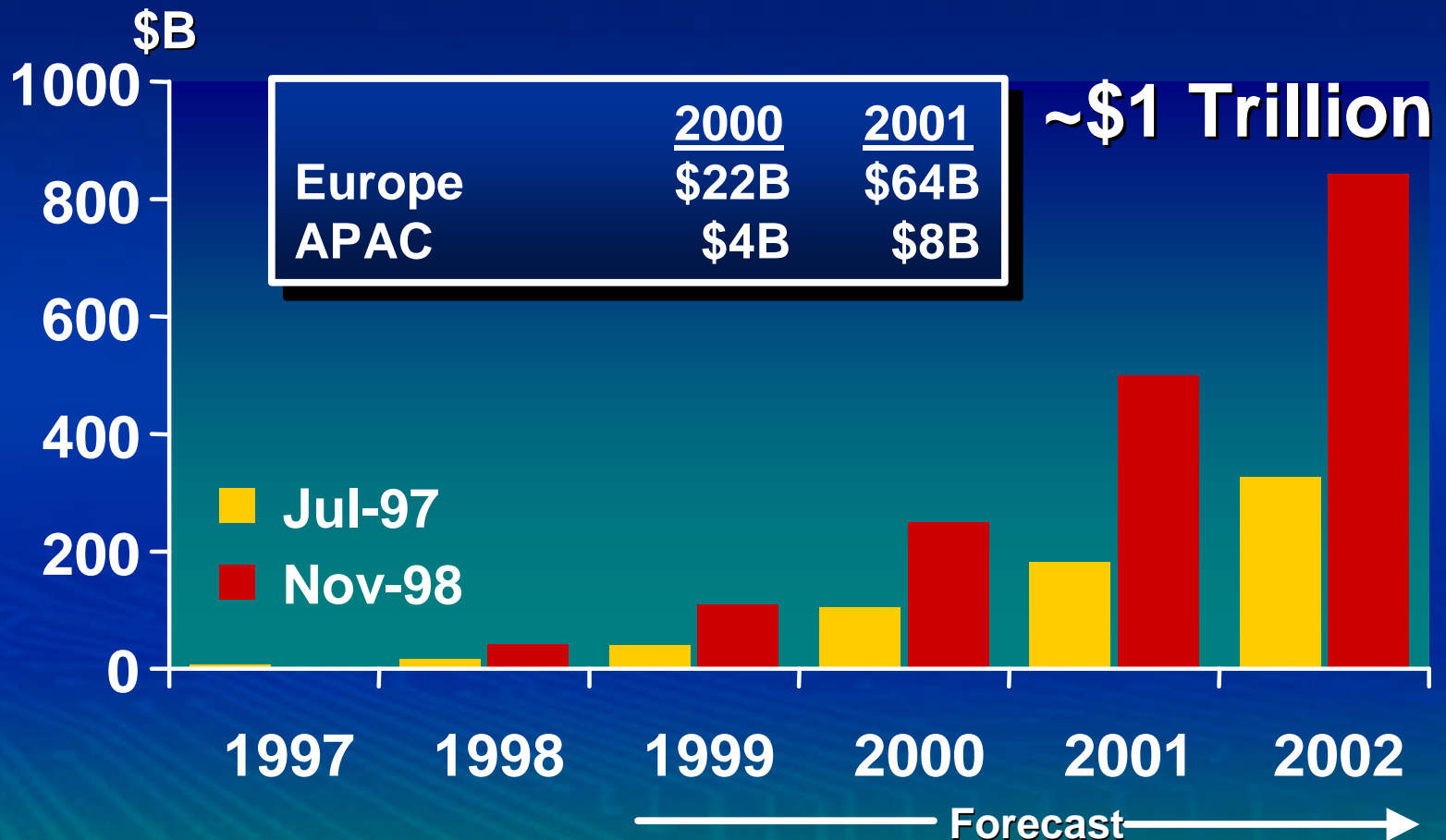
**A World of Billion Connected
Trusted Computers**

Millions of Servers

Trillions of E-commerce \$\$\$

intel® One Virtual Network

US E-Business Revenue Forecasts



Source: Forrester Research Nov. '98, US only. All segments

The Internet . . .

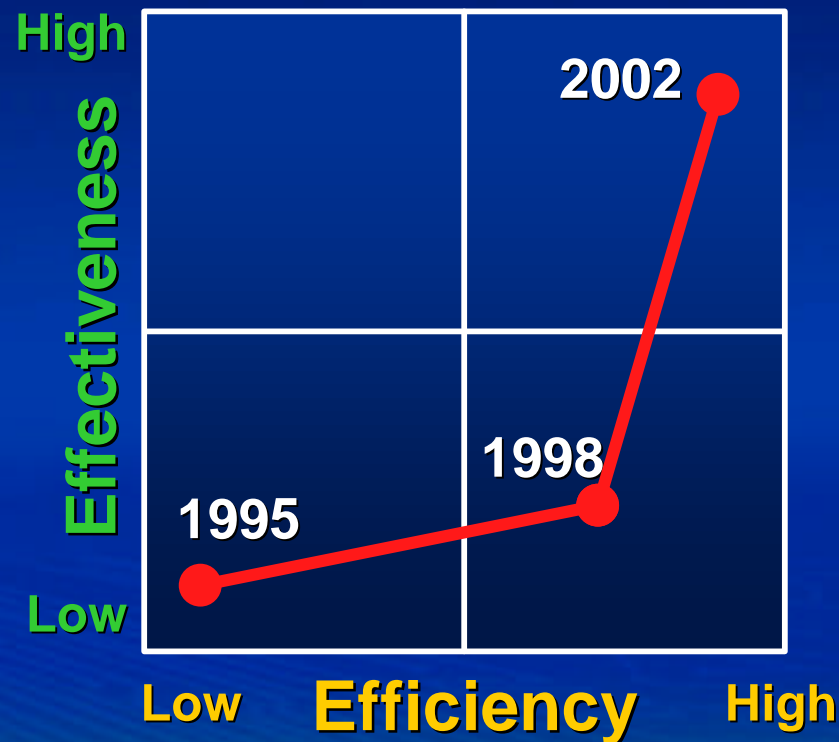
. . . is fundamental to both
Intel's and Taiwan's future . . .

- Our Businesses Run on It
- Our Products Deliver It

Increasing Business Effectiveness

Efficiency:

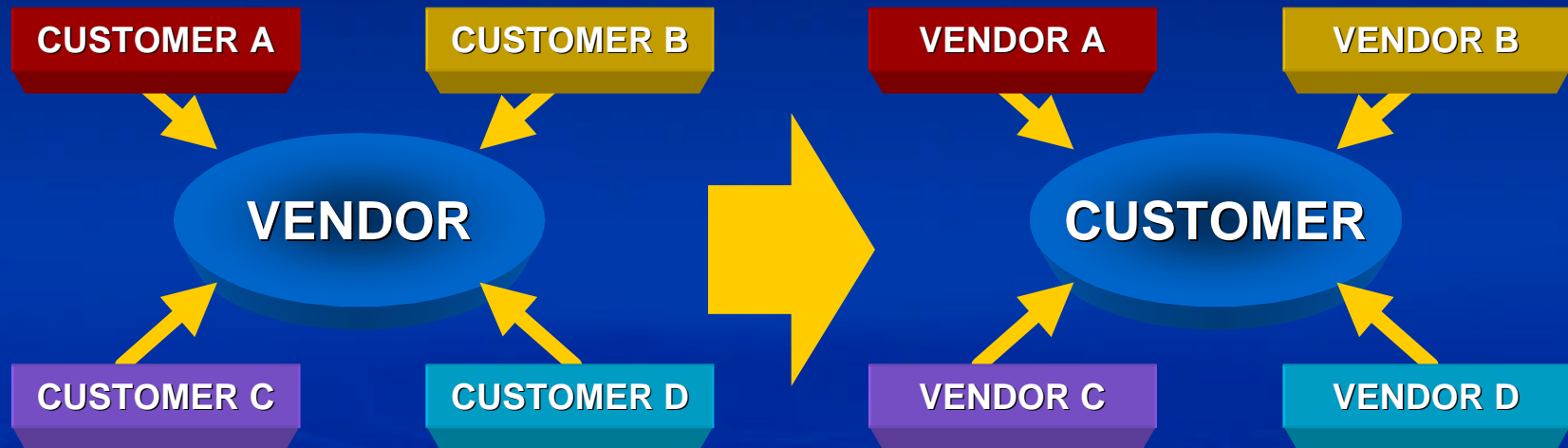
- Low Cost
- Security
- Stability
- Low Disruption



Effectiveness:

- Employee Productivity
- Business Agility
- Decision Support
- Business Automation

Example: Vendor Centric Becomes Customer Centric E-biz

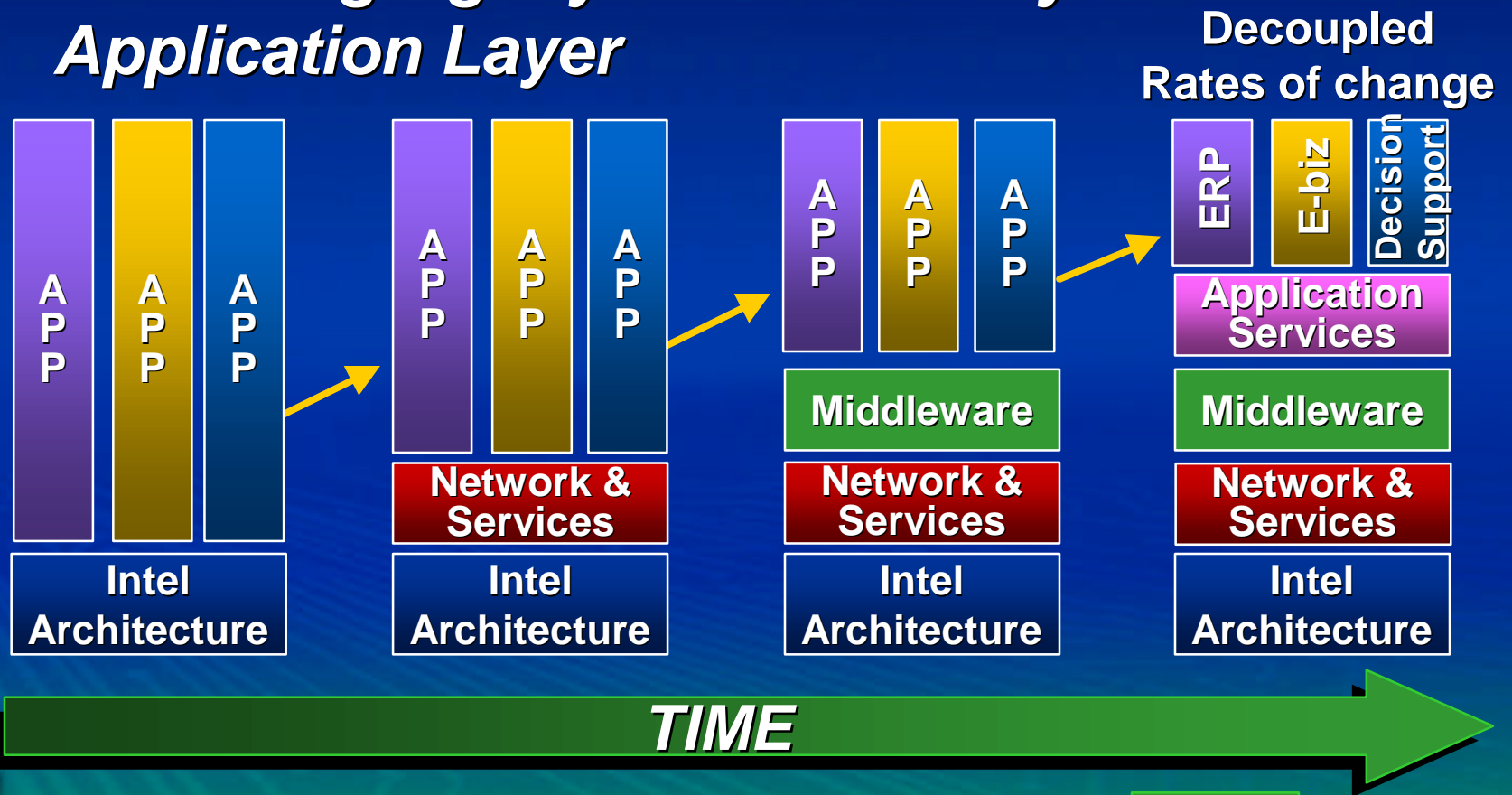


Vendor Centric

Customer Centric

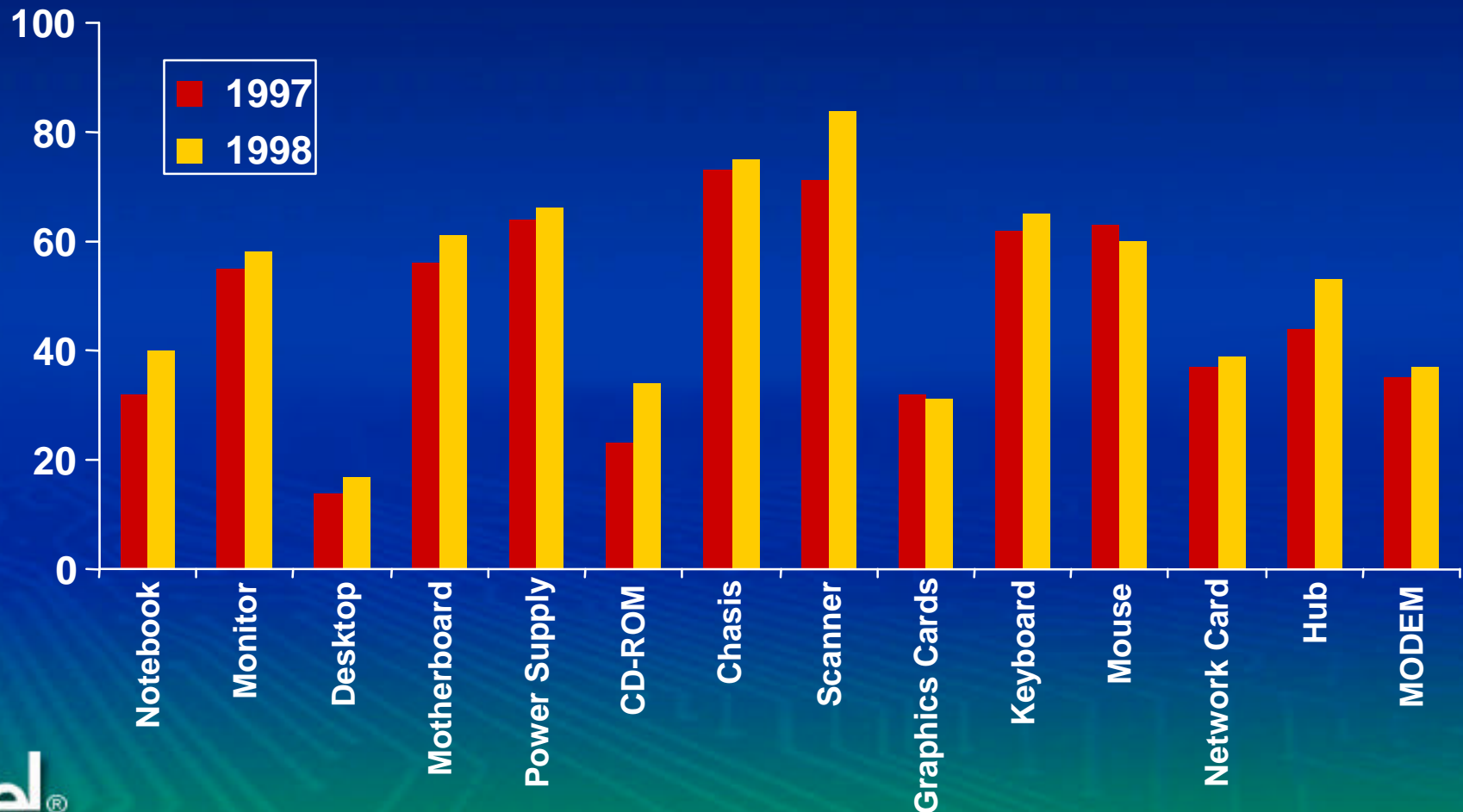
A Unified Enterprise Architecture Based on Standards

Delivering Agility and Flexibility at the Application Layer

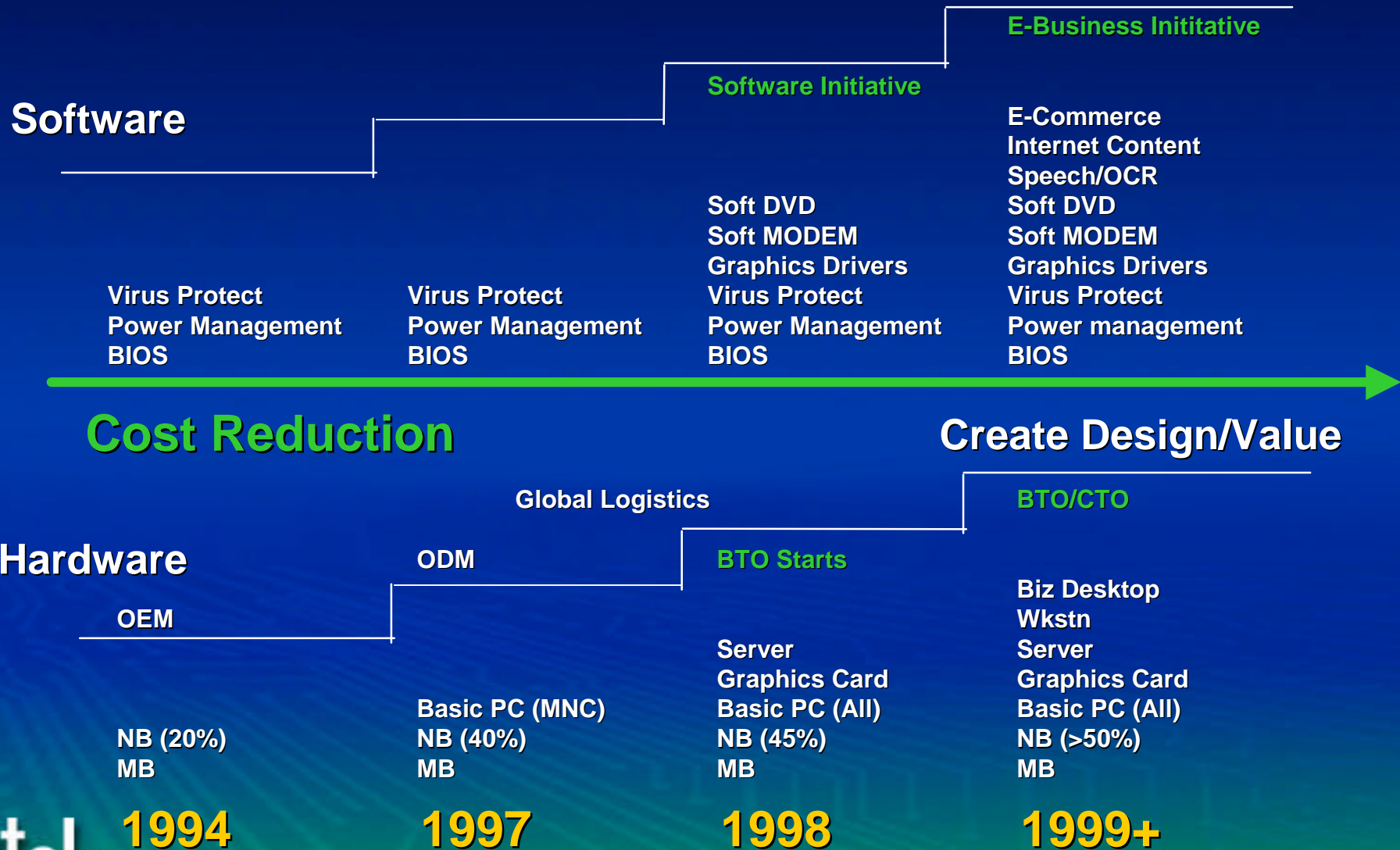


Internet Solution **VISION: APAC = Worldwide ~~PC~~ Design & Manufacturing Center**

Taiwan's PC Component Shipment As a % of World Total



Moving Up The Value Chain



Broadening APAC Value-Add Capabilities

- APAC Intel Developer Forum - Broad-scale Forum for Internet Solution Developers
- Advanced Development Center (ADC) in Taiwan
 - Desktop & Mobile
 - Server & Workstations
 - ISVs
- Software labs in Shanghai, Bangalore
- Beijing Research lab
- Corporate Business Development (VC fund)
- E-commerce Initiative
- Year2k Initiative



Market Segmentation Is a Reality



***Intel & the Industry
are Adapting to
Segmentation . . .***

Intel Celeron™ Processor

- Compete and win in the sub-\$1K PC space
- Be competitive on MHz and price
- Aggressively drive down cost
- New Intel® 810 chipset

New Celeron Processors Reinforce Commitment to Low-Cost PC Market

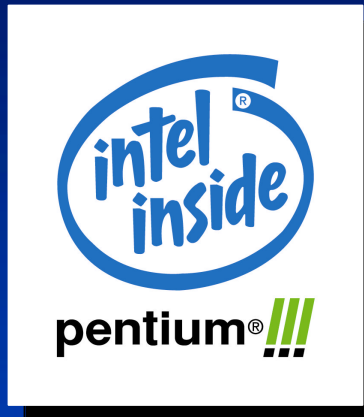
Intel Corp., Monday unveiled two new computer chips aimed at low-cost computers in an effort to reinforce its commitment to serving the lower end of the PC industry.

CNN

January 4, 1999



Pentium® III Processor



Analysts Laud Intel's Internet Strategy

Newsbyte News Networks, Feb 18, 1999

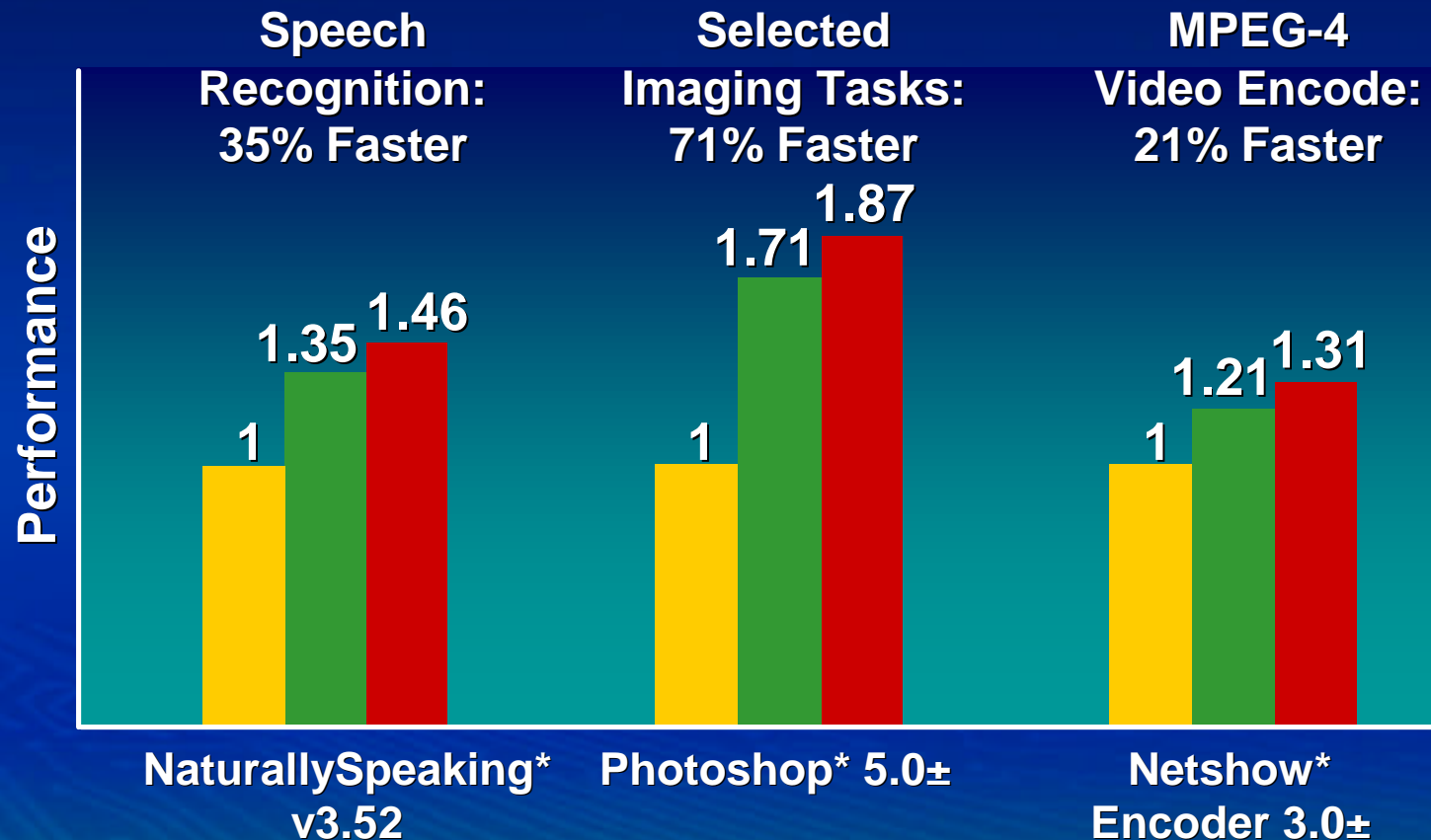
IT industry watchers at Wednesday's unveiling of the Pentium III chip say they are impressed with Intel Corp's new focus on driving growth of the internet. "Intel has to continue to stimulate demand on the high-end of the PC market and focusing on the Internet is a solid strategy," said Van Baker, analyst at Dataquest.

- 550MHz at introduction
 - Streaming SIMD Extensions
- Pentium® III processor & Intel WebOutfitterSM service deliver tangible value to the consumer Internet experience



INTEL® WEB  UTFITTERSM SERVICE

Pentium® III Processor...



- Pentium® II processor 450/100
- Pentium III processor 450/100
- Pentium III processor 500/100

For important limitations on this data, see www.intel.com/procs/perf/limits.htm
± Pre-release software. For more information, see www.intel.com/procs/perf/PentiumIII/showcase/backup.htm

* Third party trademarks and brands are the property of their respective owners
Source: Intel MAP. Config: Intel SE440BX-2, Seagate ST39102LW SCSI, 128MB SDRAM 100MHz, STB Velocity 4400 AGP with 16MB, Windows 98.



Pentium® III Xeon™ Processor

- 550MHz shipping

“Intel’s role in powering the evolving Internet is already significant and expected to grow rapidly in the next few years. For the overall server market segment, Intel-based servers currently represent approximately 80% of total units shipped, with that percentage expected to grow by 2002.”

IDC Corporation



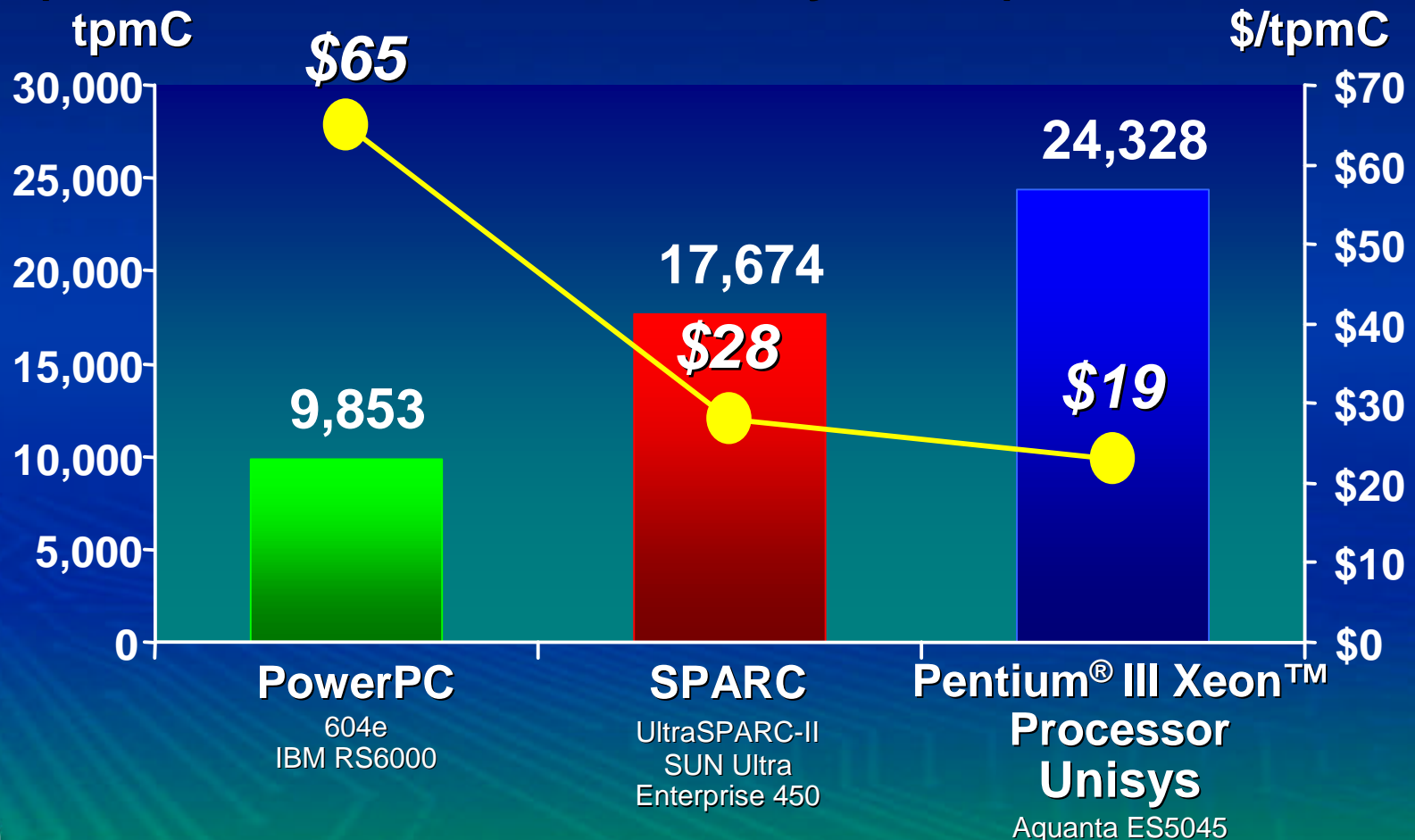
pentium® III
xeon™



intel

IA-32 Delivers Awesome Performance

(OLTP TPC-C, 4 Processor Systems)



TPC-C is the property of Transaction Processing Council. Source data from www.tpc.org.
Third party marks/brands are the property of their respective owners

Server Performance Leader

		Q4'97	TODAY
SAP R/3 SD Users 3 Tier	4-way	PA	IA
	>8-way*	Sparc	Sparc
TPC-C (tpmC)	4-way	Alpha	IA
	8-way	Sparc	Alpha
	>8-way*	Sparc	IA
TPC-D (QphD)	100GB	IA	IA
	300GB	PA	IA
	1TB	IA	IA
SPECweb96	1-way	Alpha	IA
	2-way	Alpha	IA
	4-way	Alpha	IA



* All third party marks and brands are the property of their respective owners
 * Non-clustered systems. Sources: www.tpc.org., www.sap.com, www.specbench.org. All as of 2/18/99

NEW Workstation Platforms, Applications, & Users

"Silicon Graphics Strategy: Intel Inside"

Wired News, April 14, 1998



Chrysler Chooses Units Based on Technology from Intel, Microsoft



"We expect the new workstations to help us reduce operational costs and time-to-market, while increasing design and engineering innovation."

Norman Powell, Manager of Technical Services, Technical Computer Center, Chrysler Corporation

Alias | wavefront

A SiliconGraphics Company

"... It's allowing a whole new groups of users to embrace what before was leading edge technology that was just out of reach."

-Mark Sylvester, Ambassador,
Alias|Wavefront Corporation,

SYNOPSYS®

"With Intel's rapid hardware advances, we observe comparable performance to UNIX workstations."

Art de Geus, President & CEO,
Synopsys Corporation

intel®

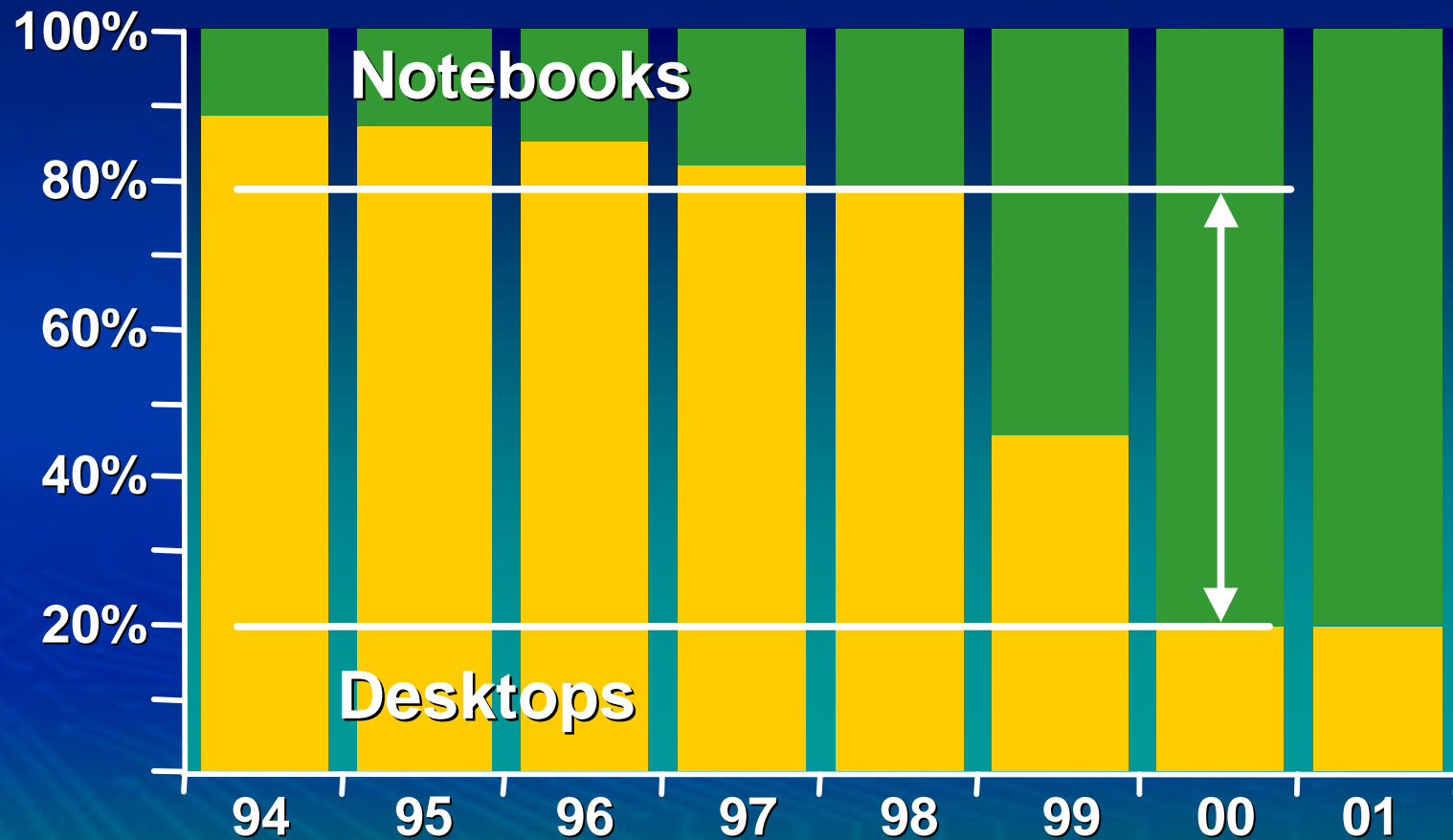
Workstation Demo

Mobile

- On the fast track to 0.18μ technology
- Closing the gap on desktop performance with new technology
 - Without compromise to mobile benefit
- Enabling low cost designs for the value mobile PC
- Get ready for mega-mobile transition



Mobile Adoption at Intel



Delivering at the Platform Level

- **Chipsets**
 - 810 value desktop
 - 810E/820 performance desktop
 - Next generation C/S workstation/server
 - 440MX mobile
- **Boards and platforms for multiple form factors**
- **RDRAM**
- **Platform standards, eg. NGIO**

PCs Are Too Complicated

The personal computer remains the only common possession that makes smart people feel stupid and requires the constant ministrations of a priesthood of experts....

“Computing Got Easier, But It Has A Way To Go”
by Walter S. Mossberg

**The Wall Street Journal,
10/8/98**

Easy PC Initiative

- **Joint Intel / Microsoft Initiative**
 - Less complexity so “it just works”
 - No ISA or Super I/O, hide MS-DOS
 - USB, Instantly Available PC / OnNow
- **1999 Deliverables**
 - Hardware Implementation Guide, FlexATX
 - Microsoft Windows* 98 Second Edition

Simple
Operation

Simple
Purchase

Simple
Setup

Simply
Reliable

Simple
Expansion

Do Not Miss the EOU Wave



* Other brands and trademarks are the property of their respective owners

Instantly Available PC

- A Key to making the PC easier to use
- Ingredients available today
- Call to action: Build and Integrate
 - ISVs Test your applications to be OnNow aware
 - IHVs Test your hardware to be instantly available and OnNow ready



EOU Demo



Intel Vision

A Trusted Virtual World

- Secure Virtual Enterprises
 - “I can trust the Internet with my business”
- Trillions of Trusted Transactions
 - “I can buy, trade, or sell anything on the Net”
- Ubiquitous Digital Content
 - “I can watch first run movies on the net”



Trusted Connected Computer for '99

*Processor
Serial Number*

Identification

*RNG
Random Number
Generator*

Cryptography

Integrity

Confidentiality

*BIS – WfM
2.0
Boot Integrity
Services*

Integrity

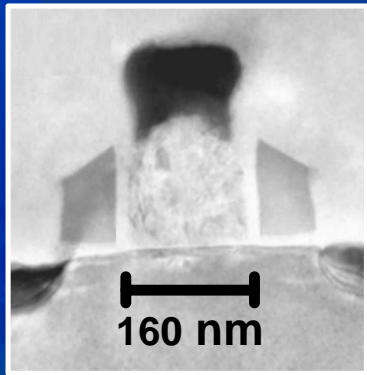
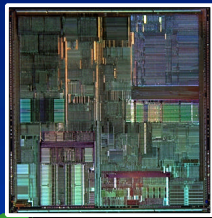
*IPSEC
Internet Protocol
Security*

*DTCP
Copy Protection*

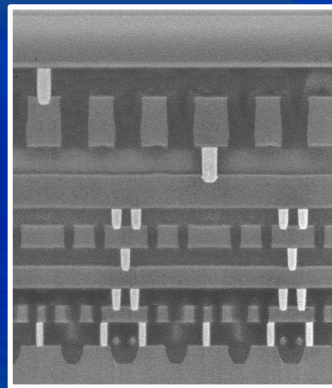
Security Demo



Fast Transition to 0.18 μ Technology

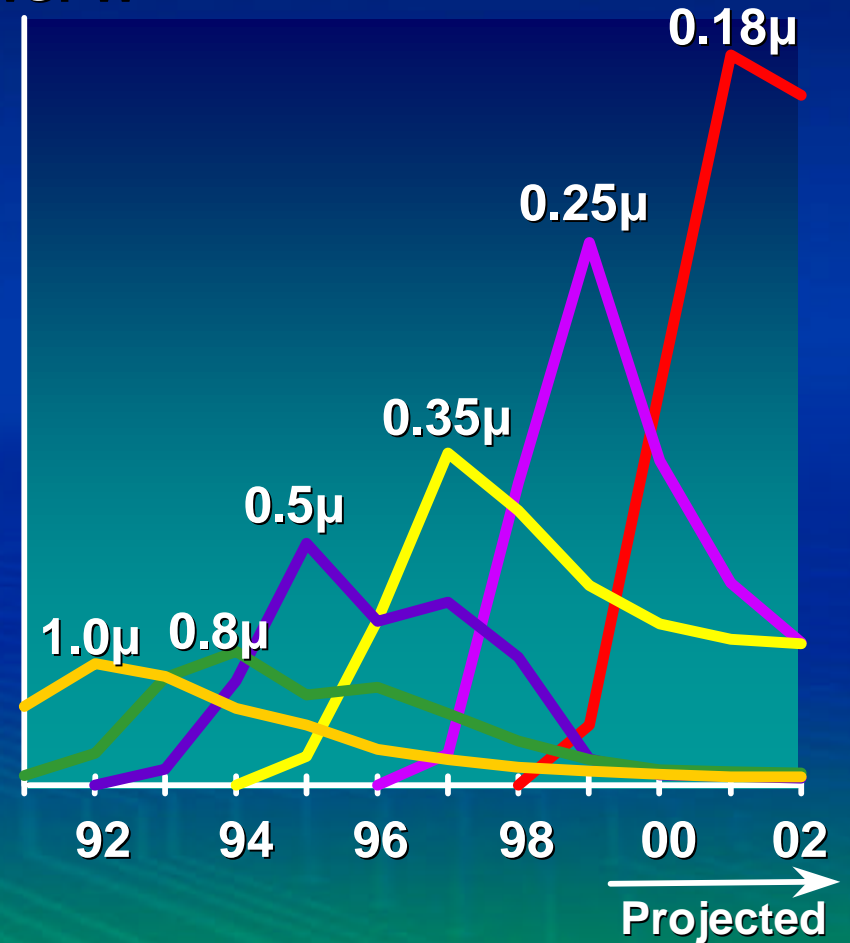


0.18 μ m Transistor



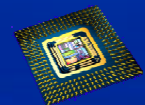
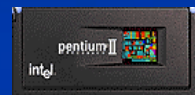
6 Layer Metal

KWSPW

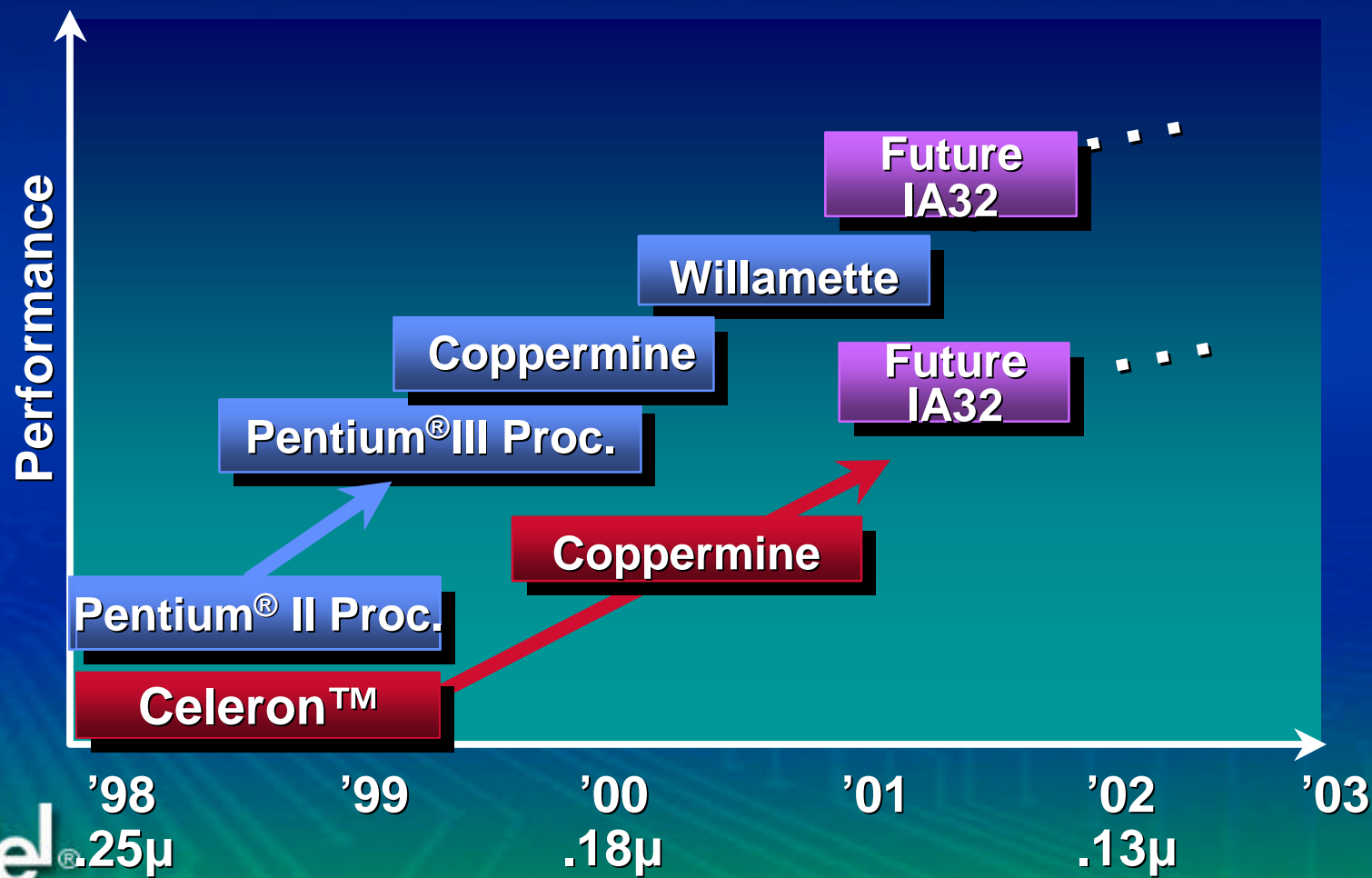


Intel Processor Roadmap

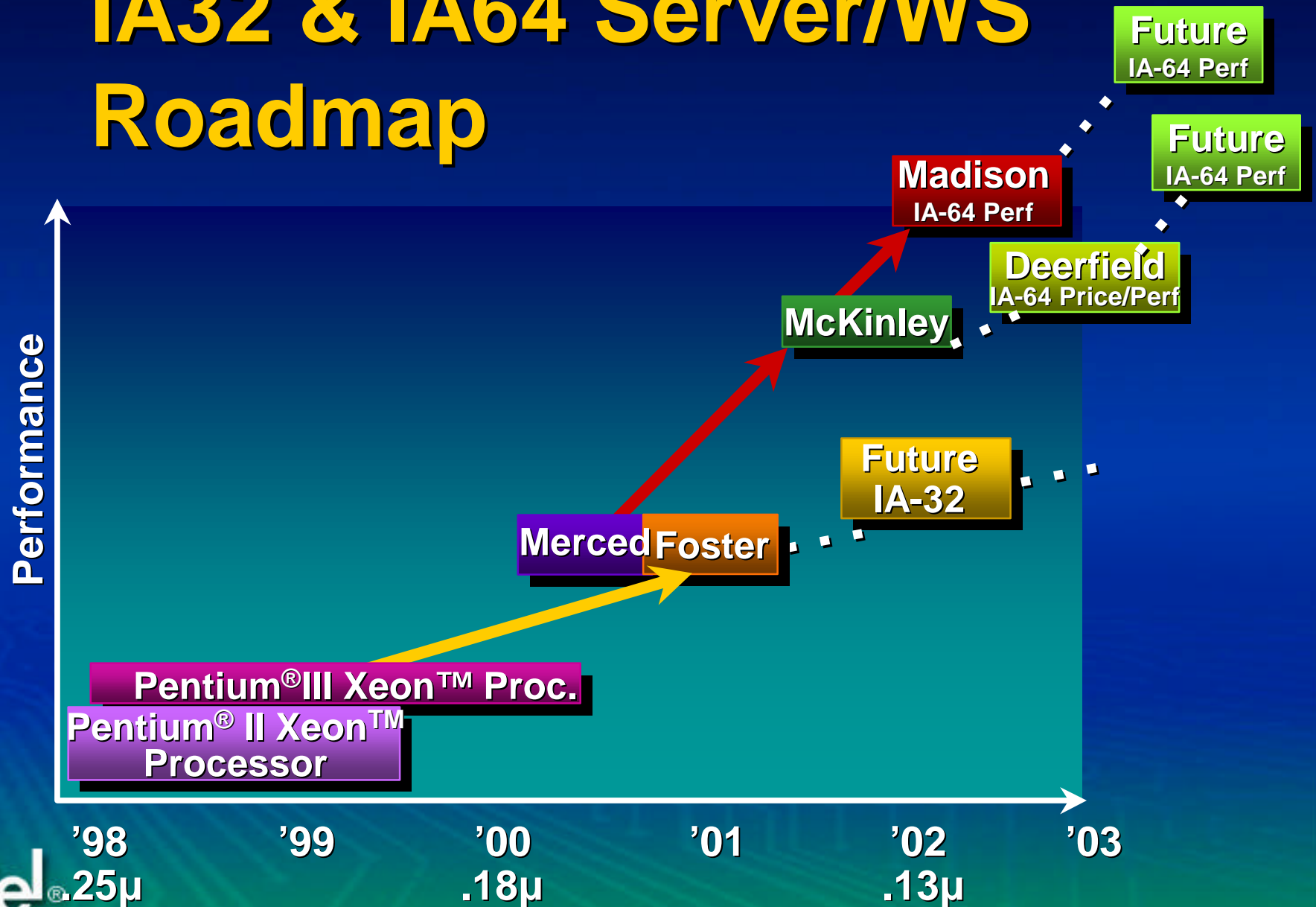
	1H'99	2H'99	1H'00
Server Workstation	Pentium® III Xeon™ processor 550 MHz	Pentium® III Xeon™ processor > 600 MHz	Pentium® III Xeon™ processor ≈ 700 MHz
Mainstream PC	Pentium® III Processor 550 MHz	Pentium® III Processor > 600 MHz	Pentium® III Processor ≈ 700 MHz
Value PC	Intel® Celeron™ Processor 466 MHz	Intel® Celeron™ Processor 500 MHz	Intel® Celeron™ Processor ≈ 500 MHz
Mobile PC	Mobile Pentium® II Processor ≈ 366 MHz	Mobile Pentium® III Processor > 600 MHz	Mobile Pentium® III Processor ≈ 700 MHz



IA32 Performance and Value DT Roadmap



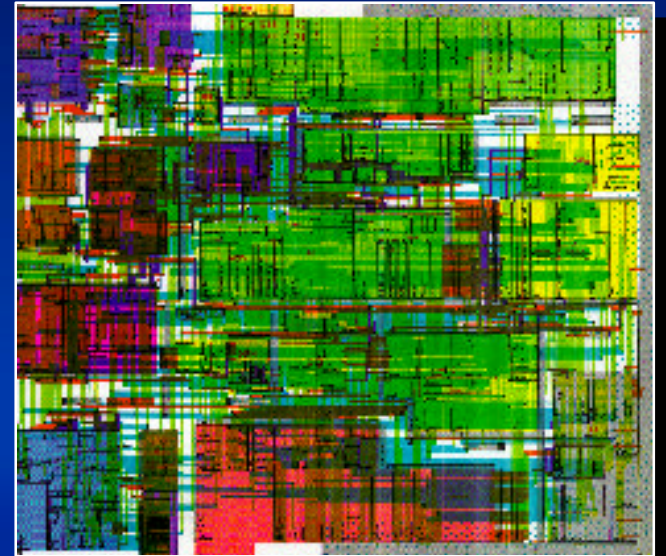
IA32 & IA64 Server/WS Roadmap



All dates specified are target dates provided for planning purposes only and are subject to change.

Merced Processor: 1st IA64 Product

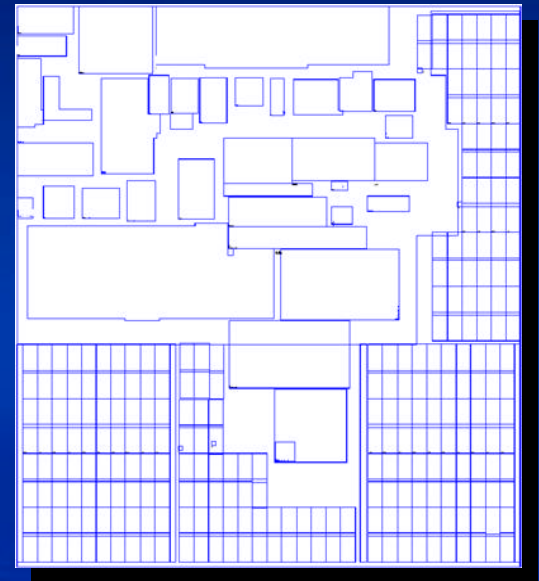
- Final stages of circuit design, layout
- 8 O/S's booting on Merced: Win64, SCO Unixware, HP-UX, Solaris, SGI IRIX, Novell Modesto, IA-64 Digital UNIX, Linux
- Very competitive tpm-C, FP, Java & encryption performance
- On track for samples mid '99
Production mid '00



McKinley Processor

2nd IA64 Product extending Merced benefits

- Improved microarchitecture 2X performance, Target 1 GHz +
- Superset Merced bus: ~3X bus bandwidth
- Samples late '00, production late '01



The Internet . . .

**. . . is the single most
important growth driver
to the computing industry**

**The Internet is powered
by Intel Architecture . . .**



The Internet . . .

**. . . is the single most
important growth driver
to the computing industry**

**And, requires Industry
collaboration ...**

IDF = Industry Collaboration

- 750 attendees Taiwan
- 7 tracks
- 71 courses
- 800 attendees China
- 2,000 attendees U.S.

***It Takes an Industry
to Create a Standard***

intel®

intel®